

*E2*  
45 (Amended) . A reduced energy binder as in claim 68

further comprising an amount of inert plasticizer.

*E3*  
49 (Amended) . A reduced energy binder as in claim 68

wherein the energetic plasticizers are selected from nitrate esters of the group consisting of n-butyl-2-nitratoethyl nitramine; trimethylolethane trinitrate; triethyleneglycol dinitrate; butanetriol trinitrate; nitroglycerin and combinations thereof.

*E4*  
51 (Three Times Amended) . An improved high solid propellant

composition comprising by weight:

*cont.*

- (a) about 10% cured poly(tetramethylene adipate) cured from a hydroxy-terminated adipate prepolymer  $Mw_n \geq 6000$  binder polymer using an isocyanate curing agent;
- (b) about 11% nitroglycerin plasticizer;
- (c) about 2.5% triacetin plasticizer;
- (d) about 22% aluminum; and
- (e) about 53% ammonium perchlorate oxidizer.

52 (Three Times Amended) . An improved high solids propellant composition comprising by weight:

- (a) about 7% cured poly(tetramethylene adipate) cured from a hydroxy-terminated adipate prepolymer,  $Mw_n \geq 6000$  binder polymer using an isocyanate curing agent;
- (b) about 6.5% n-butyl-2-nitratoethyl nitramine;
- (c) about 1.4% triacetin;

*E4*

*Cond.*

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- (d) about 22% aluminum;
- (e) about 60% ammonium perchlorate; and
- (f) about 2% dicyandiamide.

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*E5*

55 (Amended). A reduced energy binder as in claim 69  
further comprising an amount of inert plasticizer.

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*E6*

57 (Amended). A reduced energy binder as in claim 69  
wherein the one or more energetic plasticizers are selected from  
the group consisting of nitrate esters of the group consisting of  
n-butyl-2-nitratoethyl nitramine; trimethylolethane trinitrate;  
triethyleneglycol dinitrate; butanetriol trinitrate;  
nitroglycerin and combinations thereof.

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*E1*

62 (Three Times Amended). An improved high solids propellant  
composition comprising by weight:

*cont.*

- (a) about 11% cured poly(tetramethylene adipate) cured from  
a hydroxy-terminated adipate prepolymer, MW<sub>n</sub> about  
6,000 binder polymer using an isocyanate curing agent;
- (b) about 12% plasticizer selected from the group  
consisting of nitroglycerin and trimethylolethane  
trinitrate and combinations thereof;
- (c) about 22% aluminum; and
- (d) about 53% ammonium perchlorate.

*EJ*  
*Cancelled.*

63 (Three Times Amended). An improved high solids propellant composition comprising by weight:

- (a) about 11.3% cured poly (tetramethylene adipate) cured from a hydroxy-terminated adipate prepolymer, MW<sub>n</sub> about 6,200 binder polymer using an isocyanate curing agent;
- (b) about 12.2% nitroglycerin plasticizer;
- (c) about 22% (30μ) aluminum; and
- (d) about 53% (200μ) ammonium perchlorate oxidizer.

Please add new claims 65-69 as follows:

65 (New). An improved propellant composition comprising a fuel, reduced energy binder, and an oxidizer, wherein said reduced energy binder consists essentially of:

*AS*  
*Cont.*

- (a) an amount of one or more cured high molecular weight adipate binder polymers, including an amount of poly(tetramethylene adipate) wherein said one or more isocyanate-cured adipate binder polymers are cured from uncured hydroxy-terminated adipate prepolymers using an isocyanate curing agent and wherein the molecular weight (MW<sub>n</sub>) of the uncured poly(tetramethylene adipate) prepolymer is above 4000; and
- (b) an amount of energetic plasticizer wherein the plasticizer to polymer ratio is less than about 1.6:1.

*CG*  
*C&T.*

66 (New). A propellant composition as in claim 65 wherein said reduced energy binder further comprises an amount of inert plasticizer material.

67 (New). A propellant composition as in claim 66 wherein said inert plasticizer is triacetin.

68 (New). A reduced energy binder for energetic compositions consisting essentially of:

- (a) an amount of one or more cured high molecular weight adipate binder polymers including an amount of poly(tetramethylene adipate) wherein said one or more isocyanate-cured adipate binder polymers are cured from uncured hydroxy-terminated adipate prepolymers using an isocyanate curing agent and wherein the molecular weight ( $MW_n$ ) of the uncured poly(tetramethylene adipate) prepolymer is above 4000; and
- (b) an amount of energetic plasticizer wherein the plasticizer to polymer ratio is less than about 1.6:1.

69 (New). A reduced energy binder for energetic compositions consisting essentially of:

- (a) an amount of one or more cured high molecular weight adipate binder polymers including an amount of poly(tetramethylene adipate) wherein said one or more isocyanate-cured adipate binder polymers are cured from uncured hydroxy-terminated adipate prepolymers using an